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Mandibles prominent, slender, nearly as long as femur i. Two rows of long stiff bristles near the median line of the body, a few others on the cephalothorax and some extra ones at tip of abdomen. Legs very large and long, the fourth pair longest, all with many long bristles, but no shorter hairs. Some of the bristles on patellæ and tibiæ iii and iv are nearly as long as tibia iv. The bristles are more numerous, though shorter, on the metatarsi and tarsi than on the basal joints. Metatarsus ii is not broken up into smaller joints, all of the tarsi slightly curved. All the bristles are finely serrate. The palpi are quite large, the penultimate joint with a long, slender claw, beneath which is a much smaller one. The last joint or thumb is cylindrical, nearly four times as long as broad, reaching much beyond the end of the claw, and is furnished with many long bristles, some at the tip being the longest.

Locality.—Sea Cliff, Long Island, N. Y.

ACTINEDA Koch.

The body does not show any division, but is quite triangular, broadest behind, the legs are shorter than in *Erythræus*, and body and legs are covered with shorter hairs. Palpi four-jointed (the fifth is supposed to be represented by the presence of three large spines near the tip of the fourth). Eyes present; they move very rapidly and irregularly.

One species is very common on Long Island on grass, ascending trees and bushes in search of food. I have seen them eat the young larvæ of currant-worms.

Actineda agilis nov. sp.—Length 1.—1.2 mm. Body triangular, the angles rounded, a black eye each side. In front of the eyes there are four bristles; behind the eyes there are four rows of these bristles, four in each row. The legs bear a number of similar bristles, and are quite thickly clothed with finer hairs. Palpi with many bristles; the third joint bears on its inner side near the tip three stout spines, the outermost slightly longer than the other two; the last joint is much longer than the preceding, but has no terminal claw. The lower jaws of the mandibles, which are longer than the upper, end in two prominent claws. Each of the anal plates bears four hairs. Specimens found on the ground, grass or bushes, are yellowish, or but faintly red; specimens on trees are bright red, but I fail to find that they are otherwise different. I have found freshly moulted specimens encased in little silken white cocoons on chestnut trees, so I presume they have the power of spinning.

Locality.—Sea Cliff, Long Island, N. Y.; Ft. Lee, N. J.; Chicago, Ill.; Franconia, N. H. (Mrs. Slosson).

In the Trombididæ the abdomen is very large and much elevated above the cephalothorax. The eyes are four, two on each side at the end of a clavate pedicel which arises from the cephalothorax. The palpi are five-jointed, the last joint forming a clavate appendage or thumb. The body and legs are thickly clothed with hairs. The

anterior pair of legs are some distance from the posterior pairs. The species are large, red in color, and move quite slowly.

The larvæ are parasitic, and have been described under the genus *Leptus*. Our species may be placed in two genera:

With an accessory claw at end of palpus **Ottonia**.
 No accessory claw **Trombidium**.

Five species of *Trombidium* are known to me, which I separate as below:

- 1.--Body with clavate hairs **scabrum**.
 Body with feathered hairs 2.
- 2.--Claw of palp with a tooth, third joint of palp long... **giganteum**.
 No tooth to claw 3.
- 3.--Hairs very long, those on thumb nearly as long as itself, third joint of palp short, larger species **magnificum**.
 Hairs short, those on the thumb quite short, smaller species 4.
- 4.--Third joint of palpi long, body oblong, eastern form **sericeum**.
 Third joint of palpi short, body pyriform, western form **pacificum**.

Trombidium scabrum Say, Comp. Writ. vol. ii, p. 16.—Length 2.—2.5 mm. Body with very numerous, small, clavate, red hairs; legs with short, simple hairs, those on the underside at tip longer, all the joints short, last joint of leg i cylindrical, longer than the preceding one. The anterior legs are about as long as body; the posterior ones reaching behind the tip of the abdomen. Abdomen less than twice as long as wide, much broader in front. Second joint of palpus very broad, swollen above, beneath with some long, fine hairs; third joint nearly as broad as long; fourth short, ending in a long, slender claw; fifth, or thumb, clavate, reaching beyond the end of the claw, and with many short hairs.

Lives in the woods. Washington, D. C., and Sea Cliff, N. Y.

Trombidium sericeum Say, Comp. Writ. vol. ii, p. 16.—Length 3.—3.5 mm. Body oblong, twice as long as broad, slightly broader in front. Legs short, anterior pair not as long as body, posterior pair not reaching end of abdomen. Last joint of leg i equal to or barely longer than the preceding one, and slightly enlarged at the tip. Body thickly clothed with short, fine feathered hairs. Second joint of palpus not near as broad as in *scabrum*, twice as long as broad; third joint nearly twice as long as broad, the fourth long and tapering to a short claw; the thumb is clavate, reaching much beyond the claw, and with many short hairs.

In woods and in fields. Ithaca, N. Y.; Beaver Dam, Wis. [W. E. Snyder.]

Trombidium giganteum Riley, 1st Rept. U. S. Ent. Com.—Length 5—9 mm. Body about one and one half times as long as broad, broader in front, with several transverse impressed lines and some shorter depressions. The anterior pair of legs is shorter than the body, the posterior pair about reaching to

the tip of abdomen; last joint of leg i a little shorter than or almost as long as the preceding one. The plumose hairs on body are much longer than those of *sericeum*. The second joint of the palpus is but little swollen above at base; the third about twice as long as broad; the fourth long and tapering to a stout claw, which bears a tooth on its underside; the thumb is slightly clavate, the tip is truncate on one side, forming a circular, flat surface, surrounded by hairs; the whole palpus with long hairs.

Salineville, Ohio [A. D. Macgillivray]; Franconia, N. H. (Mrs. Slosson).

Trombidium magnificum LeConte, Proc. Acad. Nat. Sci. Phil. 1853. Length 5.—8. mm. Body pyriform, constricted a little behind the middle, much broader in front, with several circular depressions above. Anterior legs shorter than the body, posterior pair reaching beyond tip of abdomen. Body and legs thickly clothed with very long plumose hairs, much longer than those of *giganteum*. Last joint of leg i cylindrical, slightly shorter than the preceding. The second joint of the palpus is long and cylindrical; the third joint short, about as broad as long; the fourth longer and tapering into a long, slender claw; thumb is clavate; the whole palpus with very long fine hairs, those on the outside of the thumb being much shorter than those on the innerside.

Texas, New Mexico (?).

Trombidium pacificum nov. sp.—Length 2.2 mm. Body pyriform, with a number of circular depressions above, some connected transversely, tip of abdomen emarginate; anterior legs as long as body, posterior pair reaching beyond the tip of the abdomen. Last joint of leg i about equal to the preceding, slightly enlarged at tip. Hairs on the body very stout and finely feathered. Second joint of palpus broad, swollen at base, as in *scabrum*; third joint short, about as broad as long; fourth joint short, tapering into a claw, which is nearly as long as the joint; thumb clavate, thickly clothed with short hairs.

Olympia, Washington State [Trevor Kincaid].

We have at least two species of *Ottonia* which are very distinct:

Anal opening on dorsum.....**locustarum**.
Anal opening below.....**muscarum**.

Ottonia locustarum Riley (*Trombidium*), 1st Rept. U. S. Ent. Com.

Very peculiar in having the anal opening on the dorsum, like the Eupodid genus *Notophallus*. Dr. Riley's specimens were quite small; a specimen from Poughkeepsie, N. Y. [G. Van Ingen], is 5 mm. long. It is known from most of the Eastern States and from Texas and California.

Ottonia muscarum Riley (*Trombidium*), 1st Rept. U. S. Ent. Com.

I have not seen adults of this species; I have the young from Washington, D. C., and Sea Cliff, N. Y. Murray seems to think it the same as the European *T. parasiticum* Latr. The *Acarus para-*

siticus De Geer is the young of *Trombidium phalangii* De Geer, a true *Trombidium* and not an *Otonia*.

Atoma gryllaria Le Baron, Second Ill. Rep't, p. 61, which Murray refers to *Trombidium* is unknown to me, it may be the young of *O. locustarum*.

Trombidium bulbipes Pack., Mass. Rep't, iii, 26, I have not seen ; it has, according to the description, no thumb to the palp, if such is the case it probably belongs in another family. Four species of *Leptus* have been described : *L. araneæ* Say, *L. hispus* Say, *L. americanum* Riley and *L. irritans* Riley. It would be better, I think, to drop these larval names entirely.

The Rhyncolophidæ may be readily distinguished from the Trombididæ by having sessile eyes, and the surface of the cephalothorax being continuous with that of the abdomen. We have two genera :

Four eyes, a dorsal groove..... **Rhyncolophus.**
Six eyes, no groove..... **Smaris.**

SMARIS Latr.

Six eyes two each side and two in the middle farther in front. No dorsal groove. Palpi short, of four joints. The mouth-parts can be considerably retracted into the body.

Smaris occidentalis nov. sp.—Length 2.6 mm. Body oblong, with a short, rounded, snout-like projection in front, and a slight constriction near the middle. Body with many small, irregular, flat tubercles, and covered with short, curved, stiff bristles; two submedian rows of six circular depressions and some others less distinct lower down. Last joint of leg i about as long as the preceding joint, slightly enlarged at the tip. Legs clothed with fine short hairs; the legs are shorter than in the European *S. impressa* or the Boreal *S. plana*, and the fourth pair is a little longer than the first. The mouth-parts are almost wholly withdrawn into the body.

Olympia, Washington State [Trevor Kincaid].

RHYNCOLOPHUS Duges.

Four eyes; palpi of five joints. On the anterior part of the body there is a median line often called dorsal groove. At the tips of the mandibles is a small circle of hairs; above the base of the mandibles is a rounded projection, the frontal tubercle bearing several long spines; the tarsi of the legs are more or less enlarged and furnished with a scopula beneath.

No species, I believe, have been described from the United States, except *R. cavernarum* Pack. (Cave Memoir), which is unknown to me. I have obtained several species which live in or near woods, and can run quite rapidly.

- 1.—The dorsal groove enlarged at middle, and not at the posterior end; dorsum with fine short hairs; last joint of leg i longer than the preceding joint.

roseus.

The groove enlarged at posterior end, and not in the middle; last joint of leg i shorter than the preceding.....2.

- 2.—Hairs on dorsum of two kinds, long erect spines and shorter, finer hairs....3.

Hairs on dorsum all of one kind, either spinous or fine hairs.....4.

- 3.—Penultimate joint of leg i about five times as long as last joint; body globular.....**longipes.**

Penultimate joint of leg i about twice as long as last joint; body oblong, flattened.....**simplex.**

- 4.—Fourth pair of legs much longer than the body.....7.

Fourth pair of legs equal to or barely longer than the body.....5.

- 5.—Dorsal groove reaching much beyond eyes; dorsum with short, spinous hairs.....6.

Dorsal groove not reaching beyond eyes; dorsum with fine, slender hairs.

pilosus.

- 6.—Dorsum with some smooth patches.....**maculatus.**

Dorsum wholly covered with hairs.....**texasus.**

- 7.—Penultimate joint of leg iv three times as long as last joint.....8.

Penultimate joint of leg iv but little over twice as long as last joint; dorsum with many erect hairs.....**cinctipes.**

- 8.—Sparsely clothed with stiff, erect hairs.....**parvus.**

Thickly clothed with short, stout hairs.....**montanus.**

Rhyncolophus roseus nov. sp.—Length 3 mm.; leg i, 1.9 mm.; leg iv, 2 mm. Red; body oblong, thick, slightly broader just behind leg ii. The eyes on each side are close together; the groove extends a little past the eyes, and is not enlarged at posterior end, but near the middle; legs very short, the last joint of leg i, slightly enlarged, and a little longer than the preceding joint. Dorsum clothed with short, fine hairs, those on the legs longer. Palpi short, third joint as broad as long, fourth short and with a short claw.

Washington, D. C., under leaves in the woods.

This species may form a separate genus, as it differs considerably from the usual form of *Rhyncolophus*.

Rhyncolophus longipes nov. sp.—Length 1 mm.; leg i, 4.6 mm.; leg iv, 5.2 mm. Body globular, with the general appearance of a Phalangid. Body and legs quite thickly clothed with long, black spines, and shorter, stiff, black hairs. Two large eyes each side, about their diameter apart, situated above the second pair of legs; dorsal groove reaching as far back as the eyes and enlarged at tip. Legs very long and slender, the last joint of leg i is about one-fifth the length of the preceding joint. Palpi very spinose, especially at the base of the fourth joint, which ends in a stout claw; the thumb barely reaching beyond the claw.

Florida.

Rhyncolophus simplex nov. sp.—Length 2.2 mm.; leg i, 3 mm.; leg iv, 3.6 mm. Red; body oblong, broadly rounded behind, with a row of about three depressions each side. Dorsum clothed with many fine, short hairs and

some longer erect spines. The groove is short, reaching as far as the eyes and enlarged at tip. Legs quite stout, last joint of leg i about two-thirds as long as preceding, last joint of leg iv very slightly swollen and about one-half as long as preceding joint. Third joint of palpus nearly twice as long as broad, fourth joint with three spines beneath.

Sea Cliff, N. Y. Under leaves.

Rhyncolophus parvus nov. sp.—Length 1.9 mm.; leg i, 2. mm.; leg iv, 2.8 mm. Red; body oblong, rounded behind, broadest in front of third pair of legs; groove extending from frontal tubercle as far back as eyes, enlarged at posterior end. Dorsum sparsely clothed with quite long, erect hairs. Legs slender, the last joint of leg i a little more than half as long as the preceding; last joint of leg iv about one-third the length of the preceding joint. Palpi with the third joint twice as long as broad, the fourth long and tapering to a short claw, and with three spines beneath.

Ithaca, N. Y.; Franconia, N. H. (Mrs. A. T. Slosson).

Rhyncolophus montanus nov. sp.—Length 3 mm.; leg i, 3 mm.; leg iv, 4.8 mm. Red; body oblong, broadly rounded behind; the groove short, extending as far back as eyes, its posterior end enlarged. Dorsum very thickly clothed with very short, stout hairs. Last joint of leg i about two-thirds as long as the preceding; last joint of leg iv cylindrical, slightly larger than the preceding, and only about one-fourth as long. Palpi short, third joint nearly twice as long as broad; fourth joint quite long, with a stout claw, and with five spines beneath.

Mt. Washington, N. H. Collected by Mrs. A. T. Slosson.

Rhyncolophus cinctipes nov. sp.—Length 2.8 mm.; leg i, 3 mm.; leg iv, 5 mm. Red; legs pale, with some red bands on femora, metatarsi and tarsi. Body oblong, rounded behind; groove short. Dorsum thickly clothed with erect spines, some very long, others shorter. Last joint of leg i much swollen, about two-thirds as long as the preceding; penultimate joint of leg iv about two and one-fourth times as long as the last joint, which is much swollen. Third joint of palpus one and one-half times as long as broad, with three spines beneath; fourth joint with four spines beneath.

Sea Cliff, N. Y. Under leaves in the woods.

Rhyncolophus maculatus nov. sp.—Length 1.5 mm.; leg i, 1.3 mm.; leg iv, 1.4 mm. Body oblong, somewhat pointed behind, widest just behind the second pair of legs. The dorsal groove does not reach the anterior margin of the body, but extends a long distance behind the eyes, nearly reaching the middle of the body; it is enlarged at each end. Body thickly covered with very short, red spinous hairs, leaving several smooth patches, which are pale; there is a long, smooth patch on each anterior side, its cephalic end bending toward the groove; in some specimens a smooth patch surrounds the groove, and the side patches are broken up into rows of spots. Legs short, last joint of leg i about two-thirds as long as the preceding. The legs are clothed with hairs like those on the body.

Sea Cliff, N. Y.; Washington, D. C., and Florida; running over small weeds near woodland.

Rhyncolophus texanus nov. sp.—Length 1.9 mm.; leg i, 2. mm.; leg iv, 2. mm.—Similar to *R. maculatus*, but has a longer, more slender body; the last joint of leg i nearly as long as the preceding; the body thickly clothed with short hairs like those of *R. maculatus*, but without smooth patches; the dorsal groove is exceedingly long, reaching from the anterior end of the body to the middle of the dorsum.

Texas.

Rhyncolophus pilosus nov. sp.—Length 1.4 mm.; leg i, 1.4 mm.; leg iv, 1.4 mm. Red; body oblong, more slender than other species, rounded behind, widest at middle and tapering to the head; groove short, only reaching as far as eyes. Body covered with quite long, stiff hairs. Legs short; last joint of leg i a little over half as long as the preceding; last joint of leg iv about half the length of the preceding joint.

Sea Cliff, N. Y., in moss.

TETRANYCHIDÆ.

These are spinning mites found sucking the leaves of plants. They are much smaller than the other members of this super-family. The palpi are short and stout, with a short appendage; the eyes sessile, and the surface of the cephalothorax continuous with that of the abdomen. The posterior pairs of legs are some distance behind the anterior pairs; they are all short, and the tarsi are never enlarged, as is common in the two preceding families. Two genera are known from the United States:

First pair of legs longer than the body.....**Bryobia.**
First pair of legs shorter than the body.....**Tetranychus.**

One species of *Bryobia* (*B. pratensis* Garman) is quite common in the United States. I have taken it at Washington, D. C., and at Sea Cliff, N. Y. *B. pallida* Garman is probably the young of *B. pratensis*. Good figures and description are found in "Insect Life," vol. iii, No. 2, p. 45.

Of *Tetranychus*, many species doubtless occur in the United States. The form sometimes seen on household plants and called the "red spider," has been referred to the European *T. telarius*, but I do not know that specimens have been compared with the European form.

Dr. Riley has described, in his annual report for 1889, a new species found on the orange, *T. sexmaculatus*. Another species is found quite commonly on cotton, and is figured by Glover.

I have collected a species on the leaves of the pecan tree, which may be called

Tetranychus viridis nov. sp.—Length .4 mm. Greenish, with a large blackish, or sometimes reddish, spot each side, covering the shoulders of the abdomen and the posterior angles of the cephalothorax. The cephalothorax is quite distinctly separated from the abdomen by a constriction; the abdomen broadest at the shoulders; the cephalothorax short, broadly rounded. The body bears a few long bristles, those on the legs are similar, but shorter. The anterior pairs of legs are somewhat larger than the posterior pairs.

On the upperside of the pecan leaves in Texas.

Another species is found very commonly on the leaves of oak and chestnut on Long Island.

Tetranychus bicolor nov. sp.—Length .35 mm. Cephalothorax pale; abdomen dark red, the anterior edge of the red with a median and lateral projections; legs pale yellowish; eyes red; bristles white. Sometimes there is a light dorsal streak on the abdomen. Body elliptical, pointed in front. Cephalothorax with four long bristles; abdomen with a submedian row of five, and an outer row of four bristles. All the bristles arise from small, circular depressions. Legs short, subequal, hairy. The male has the abdomen more pointed than in the female, otherwise similar.

I have found it in all stages during August and September, on the upperside of the leaves of the oak and chestnut, on Long Island.

CHEYLETIDÆ.

Two species have been recorded from the United States which belong to this family, viz., *Cheyletus seminivorus* Pack. and *Myobia musculi* Schrank. The latter is also common in Europe. I have not seen either of these forms, nor any other species from the United States, though doubtless several occur in all parts of the country.

EUPODOIDÆ.

This super-family embraces three families, but two of which are found in the United States.

Palpi five-jointed or three-jointed BDELLIDÆ.
Palpi four-jointed EUPODIDÆ.

The BdeIIDæ, or snout-mites, are quite readily recognized by their bright red color, their elbowed palpi, and their long, pointed mandibles. The cephalothorax is quite distinct from the abdomen, and bears two eyes on each side. The posterior pairs of legs are close behind the anterior pairs, and there is no stenum. The principal characters to observe in the separation of species are: the shape of the joints of the palpi, and especially the last joint and its hairs; the shape of the mandibles, and some European authorities lay much stress on the position of the hairs on the mandibles; the form of the

body, length of legs, and of the bristles on the cephalothorax are of secondary importance. Our forms are carnivorous and live free, but there are some parasitic species in Europe. Three genera are known to me :

- 1.—Palpi three-jointed..... **Eupalpus.**
 Palpi five-jointed2.
- 2.—Last joint of palpus forming a strong claw.....**Scirus.**
 Last joint of palpus blunt.....**Bdella.**

Bdella and *Scirus* are quite similar, except in form of the palpus ; *Eupalpus* has the palpi much smaller appressed to the short mandibles, and the cephalothorax is much less distinct from the abdomen than in the other genera. Say described a species of *Bdella* (*B. oblonga*) from Georgia, and Packard a form from the sea-shore of New Jersey (*B. marina*). I have never seen *B. oblonga*, but have collected *B. marina* and three other species on Long Island.

- 1.—Last joint of palpus widened at tip, hairs at end very much longer than the joint.....**cardinalis.**
 Last joint not widened at tip, hairs only as long or shorter.....2.
- 2.—Hairs about as long as the joint**robusta.**
 Hairs distinctly shorter.....3.
- 3.—Joint two of palpus about twice as long as joints three plus four..**marina.**
 Joint two three times as long as three plus four.....**peregrina.**

Bdella cardinalis nov. sp.—Length 1.2 mm. Red ; the mandibles are about as long as the cephalothorax, and the latter is a little broader than long, the sides convex ; there are two bristles above on each mandible, one near the base, and the other about one-third the distance to the apex. The second joint of the palpus is about three-fourths the length of the mandibles, it has a few short bristles ; the next two joints are subequal, about as broad as long ; the fifth joint about one-third longer than joints three plus four, and not one-half as long as joint two, it is widened at the tip and bears on the end two very long bristles, the outer one about as long as the mandibles, the inner one shorter, near the tip of the joint on the innerside are two short bristles. The cephalothorax has two bristles in front, and two near the posterior angles. The abdomen has a row each side, a few on the middle, some at tip, and a prominent one on each shoulder. The legs have many bristles, but quite short, except some on the fourth pair.

Living in the woods under leaves, in moss, and under rotten wood.

Sea Cliff, N. Y. ; Ft. Lee, N. J. Apparently the same species from Chicago, Ill., and from Franconia, N. H. (Mrs. A. T. Slosson), but the specimens are mutilated.

Bdella peregrina nov. sp.—Length 1.7 mm. Red ; mandibles longer than the cephalothorax, which is a little broader than long, the sides slightly concave near the front ; each mandible has but one bristle above near the tip. The second joint of palpi is three-fourths as long as the mandibles, and has each side about five stiff hairs ; joints three and four subequal, as broad as long ; the

fifth joint but little shorter than the second, nearly three times as long as joints three plus four, not widened at tip, with four or five bristles each side and two at tip, the outer one about two-thirds as long as the joint, the inner one shorter. The body bears bristles similar to *B. cardinalis*, except those on the abdomen are shorter, and the one near the hind angles of the cephalothorax is much longer than usual; legs also with bristles, those on the fourth pair longest.

Sea Cliff, N. Y. On the ground under boards and chips.

Bdella robusta nov. sp.—Length 1.1 mm. Red; mandibles shorter than the cephalothorax, which is as broad as long, with the sides convex; there is but one bristle above on the mandibles near the tip; palpi short; second joint about one-half as long as the mandibles, and with a few bristles; the third and fourth subequal, as broad as long, the third with a bristle; the fifth nearly twice as long as the third plus fourth, not widened at tip, two bristles on each side and two at tip, the outer one as long as the joint. The bristles on the abdomen and legs are quite short.

One specimen has a number of black spots above; it seems related to *B. peregrina*, but has a much stouter body, with shorter mandibles and palpi.

Sea Cliff, N. Y. On the ground.

Bdella marina Pack., Am. Nat. 1884, p. 828.—Length 2. mm. Red; the mandibles are shorter than the cephalothorax, which is about as broad as long, the sides in front are concave; the mandibles have several bristles above at base and two or three nearer the tip. The second joint of palpus is about four-fifths as long as the mandibles, and with several long bristles; the third joint is about as long as broad, while the fourth is nearly twice as long as broad, both have several bristles, one on the innerside of the fourth is quite long; the fifth joint is nearly twice as long as the third plus fourth, it has about eighteen bristles, those near base are short, others near tip are quite long, the two on the tip not over one-half the length of the joint, and barely longer than some on the sides of the joint. The bristles on the body are very long and prominent.

This species lives on the sea-shore between high- and low-water marks.

Sea Cliff, N. Y.; New Jersey (Packard).

Scirus quadripilis nov. sp.—Length .7 mm. Red; body broadest at posterior edge of cephalothorax, tapering behind and before, the sides of the cephalothorax concave in front; a pair of long bristles on the anterior edge, nearly as long as the palpi, and a bristle at each posterior angle of the cephalothorax nearly as long as the entire body. The first joint of palpus very short; the second about twice as long as broad; the third similar, with a spine above and a longer one below; the fourth about the same length with a long spine at base on the innerside, and one at tip nearly as long as the joint, usually a small one near the middle; the fifth joint curved in the form of a claw with a short spine a little before the middle, and a fine hair just before the tip. Some short hairs on abdomen and legs, one or two long ones on tibia iv.

Sea Cliff, N. Y. On ground, under stones and in moss.

Eupalpus echinatus nov. sp.—Length .9 mm. Red; legs and mouth-parts pale, hairs black. Body oval, pointed in front, rounded behind, broadest behind the middle; the mandibles are short, on a small neck, the palpi closely appressed to their sides; first joint of palpus short, the second much longer, and the third shorter than second. Body and legs covered with short, stiff, thick hairs, which are finely serrate on the edge; these hairs are from one-half as long to nearly as long as the mandibles; there are about sixty of them on the dorsum, and one on the second and one on the third joint of the palpi.

Franconia, N. H. (Mrs. A. T. Slosson).

EUPODIDÆ.

The species of this family are very small, and I have not collected them thoroughly. Dr. Riley has recorded a species of *Penthaleus* from Florida, but his description shows that it does not belong to this family. In the shape of the various parts of the palpus are found the characters for the separation of species. The three genera known to me may be separated as below:

- 1.—First pair of legs more than twice as long as body.....**Linopodes.**
First pair of legs much shorter2.
- 2.—Hind femora much thickened, mandibles small.....**Eupodes.**
Hind femora normal, mandibles very large.**Rhagidia.**

Linopodes antennæpes nov. sp.—Length .6 mm. Reddish or yellowish, sometimes with some pale marks; legs mostly yellowish, except distal half of leg i, which is hyaline. Body oblong, rounded in front and behind; broadest at hind margin of cephalothorax; cephalothorax semicircular, with a large shining eye each side. A narrow, emarginate, smooth band just behind cephalothorax, which gives off a median projection reaching to the tip of the abdomen, the whole forming a T. Dorsum of body with a few scattered hairs. Leg i more than twice as long as body, femur i longer than body; legs ii and iii slender, not quite as long as body; leg iv with femur enlarged. Mandibles short, forming a little cone; palpi a little longer than mandibles, joints subequal, the third longest. It differs from the European *L. motatorius* in having tibia i nearly as long as the metatarsus, and the tarsus i being divided into three or four joints. The body of the male is a little more globose than that of the female.

This lives on the ground, and is most common under pieces of wood, bark, etc., that have been on the ground for some time. The first pair of legs is used as feelers; ordinarily, it walks slowly, but when disturbed can move very rapidly to the rear.

Sea Cliff, N. Y.; Ft. Lee, N. J.; Chicago, Ill.; Franconia, N. H. (Mrs. A. T. Slosson).

Eupodes variabilis nov. sp.—Length .3 mm. Reddish; yellowish, or sometimes greenish; legs pale. Body oblong, broadest at base of abdomen; cephalothorax semicircular; abdomen slightly tapering, but broadly rounded behind; a large, elliptical, shining eye in each posterior angle of the cephalo-

thorax: body with a few scattered bristles more numerous at tip, where they form a cluster each side; legs with a few bristles, the first pair the longest, slightly longer than the body; femur i as long as femur, patella and tibia ii; leg iv as long as body, the femur very greatly thickened. Palpi short; first joint minute; second three times as long as broad, curved, with a hair on outer-side; third joint about same length, with two bristles near tip; fourth about one-half as long as third and much narrower, with about five stiff bristles at and near tip.

Sea Cliff, N. Y. This is found in the same places as *Linopodes*, and can run with remarkable swiftness.

Rhagidia pallida nov. sp.—Length .7 mm. Pale hyaline or whitish. Body oblong, distinctly divided into cephalothorax and abdomen; the cephalothorax a little longer than broad, broadest behind, truncate in front, with an eye near each posterior angle; abdomen broadest at base, then becoming much narrower with concave sides, the apex broadly rounded. Legs stout, but joints not thickened, hind legs longest, a little longer than body, first pair about the length of body. Body and legs with scattered bristles; mandibles very large, chelate, nearly as long as the cephalothorax, bent downwards, a fine hair above just before tip, the branches of mandibles without teeth, strongly curved. Palpi a little longer than mandibles; joint short; second three times as long as broad; third about one and one-half times as long as broad, with two bristles; fourth a little longer than third and pointed, with about six stiff bristles at tip and two near the base.

This is a most remarkable mite, its great resemblance to a Solpugid suggested to Thorell the generic name, *Rhagidia* diminutive for *Rhax*, a genus of Solpugidæ. In fact, I consider this mite as the key to the systematic position of the Acarina. I cannot help believing that the mites came from a form closely resembling the modern Solpugids. It lives on the ground under damp boards or stones.

Sea Cliff, N. Y.; Washington, D. C.; Franconia, N. H. (Slosson).